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Morbidity and mortality in a Brazilian cohort of subjects undergoing rotational atherectomy for extremely calcified lesions

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THEME: Coronary Interventions

TOPIC(S): Other Coronary Interventions

AIMS

This study aims to evaluate the early and late incidence of complications of rotational atherectomy for complex and extremely calcified lesions with DES implantation.

METHODS AND RESULTS

A cohort of 138 subjects (71 ± 10 y, 63% male, BMI: 26.9 ± 4.6 , creatinine clearance: 69.6 ± 38.0 mg/dl, LVEF: $59 \pm 14\%$), were followed after rotational atherectomy between 2012 - 2016. The most frequent risk factors observed were hypertension (87%), dyslipidemia (69%), diabetes (44%) and sedentary lifestyle (72%). 244 vessels were treated, of which 179 vessels with the aid of rotational atherectomy (burr size 1.75mm in 46% of the procedures, Relation burr size/vessel was 0.6:1). In all, 308 Everolimus eluting stents were implanted (2.28 ± 2.0 stents/patient). Vessels stenosis: $86 \pm 11\%$, 42.6 ± 23.8 mm in extension, 63% presented multivessel disease, Average Syntax score data: 22.4 ± 11.5 , with 18% of individuals classified as high risk, 24% as intermediate risk and 58% as low risk, Arterial access: Femoral in 76.8% of cases, radial in 22.5% and ulnar in 0.7% of cases. 70% of the subjects performed rotational atherectomy in 1 vessel, 28% in 2 and 2% in 3 vessels. Lesion transposition was achieved in 99% of the cases, Angiographic success with stent implantation in 98% of vessels. The most common approach was performed in the left anterior descending artery (58% of cases). The hospital length of stay was 2.6 ± 3.7 days, and the late follow-up was performed by phone calls within four years of the procedure. In-hospital events were observed in 20 (14.4%) of the individuals. In-hospital major adverse cardiovascular events (MACE) were observed in 10 subjects (7.2%), with 6 deaths (in-hospital mortality: 4.3%). Minor events occurred in 10 subjects (7.2%). The following events were observed: Myocardial infarction 3 (2.1%), Large dissections 6/179 (3.4%) in vessels submitted to rotational atherectomy and adequately treated with stents, Arterial perforations (3/244), Peri-procedure stroke (1/138), Pneumonia (1/138), Rotawire fracture with buried tip between stent and vessel (1/138), Hematoma at the access site (3/138), Renal failure exacerbation (2/138), Burr entrapment (2/138). Regarding phone contact, 60% (83/138) of individuals or their families were successfully contacted. The late mortality rate within 4 years observed through phone was 14.5% (12/83 individuals), being renal failure the major cause of death 4/12 patients (33.3%). 97% of patients maintained regular use of DAPT. Only 42% reported regular exercise. Discomfort/chest pain were reported by 13% of the individuals. The total mortality rate found in 4 years was 13% (18/138), including in-hospital and out-of-hospital late events.

CONCLUSIONS

Rotational atherectomy and DES in heavy calcified and long lesions presented a low occurrence of MACE in immediate and late follow up, leading to a high success rate of appropriate stent implantation (98%) in lesions that otherwise might not be feasible.

